8.5 AIR QUALITY

8.5.1 Affected Environment

There are no air quality monitoring stations close to PTA. The closest air quality monitoring stations are in Hilo and Kona. The monitoring station in Hilo collects data on sulfur dioxide and PM_{10} levels. The Kona monitoring station in Kealakekua currently collects data on sulfur dioxide levels; PM_{10} monitoring at this station was discontinued in June 2000. Military vehicles, aircraft flight operations (mostly helicopters), and ordnance use represent the major Army emission sources that are present at PTA. A package rock crushing facility from SBMR is moved to PTA when needed.

A rain gage at Bradshaw Army Airfield records precipitation data. Annual precipitation averages 16.9 inches per year, ranging from 1.6 inches in June to 4.4 inches in March (WeatherDisc Associates 1990). The Army operates four automated weather stations at PTA, one each in the eastern, southern, north-central, and western portions of PTA. Data from these stations are used in a real-time context for fire management purposes. Consequently, comprehensive data summaries from these stations are not available. Wind speed data from these stations have been evaluated to assist in evaluation of potential wind erosion conditions. Data from the eastern and western stations are most representative of conditions in areas where troop and vehicle maneuver activity occurs. Wind speeds at the eastern station exceed the 15 mph (24.1 kph) threshold commonly associated with wind erosion processes about 35 percent of the time, as compared to only six percent of the time at the western station. The low-density silty soils common near the western side of PTA are subject to wind erosion at lower wind speeds than most soils. Wind speeds on the western side of PTA exceed the likely wind erosion threshold of 12 mph (20 kph) about 15 percent of the time.

Although Hawai'i is in a PM_{10} attainment area under the Clean Air Act, the island of Hawai'i and the surrounding land at PTA has experienced discrete events in which dust impacts have had adverse effects. PM_{10} emissions are important because they are easily airborne and are small enough to be inhaled deep into the lungs creating potential adverse health effects. Because of the extremely small particle size of the soils found on West PTA Acquisition Area (WPAA), the particles easily become airborne during high wind events and other disturbances once vegetation has been removed. In July 1999, a severe dust storm resulted from wind blowing over areas denuded of vegetation by a recent fire. The result was fugitive dust emissions at high enough levels to require temporary evacuation of residences at Waiki'i Ranch.

8.5.2 Environmental Consequences

Summary of Impacts

Two significant air quality impacts have been identified at PTA under the Proposed Action or the RLA Alternative. Vehicles traveling on unpaved roads and in off-road maneuver areas would be a permanent source of increased fugitive dust emissions. Wind erosion from areas disturbed by off-road vehicle maneuver activity would be an additional permanent source of increased fugitive dust emissions.

Fugitive dust PM_{10} emissions from military vehicle use on unpaved roadways and off-road areas would increase by about 429 tons per year (390 metric tons per year) compared to No Action conditions. Visible dust is a clear indication of airborne PM_{10} concentrations that are typically in the range of several thousand micrograms per cubic meter. It takes only a few hours of such concentrations to produce a 24-hour average that exceeds the state and federal 24-hour average PM_{10} standard of 150 micrograms per cubic meter. PM_{10} emissions are important because they are easily airborne and are small enough to be inhaled deep into the lungs creating potential adverse health effects. The substantial increase in fugitive PM_{10} emissions from military vehicle use at PTA, the likelihood of exceeding the federal 24-hour standard, and the potential impacts to quality of life to surrounding communities combined may result in a significant air quality impact at PTA under the Proposed Action and the RLA. The impact from fugitive dust emissions could be reduced through mitigation, but it is unlikely that the impact could be reduced to a less than significant level.

Wind erosion from areas disturbed by vehicle maneuver activity would increase by about 1,602 tons per year (1,453 metric tons per year) compared to No Action. The substantial increase in fugitive PM_{10} emissions from wind erosion at PTA, the likelihood of exceeding the federal 24-hour standard, and the potential impacts to quality of life to surrounding communities combined may result in a significant air quality impact at PTA under the Proposed Action the RLA Alternative. The impact from fugitive dust emissions could be reduced through mitigation, but it is unlikely that the impact could be reduced to a less than significant level. Rotation of off-road vehicle maneuver activities among available areas would help to mitigate direct fugitive dust emissions from vehicle maneuver activity and subsequent wind erosion from disturbed areas.

Construction activities under either the Proposed Action or the RLA Alternative would result in nitrogen oxide emissions from construction equipment that would be 192 to 213 tons (174 to 193 metric ton) in 2005 and 184 to 186 tons (167 to 169 metric tons) in 2006. Nitrogen oxide emissions are of concern primarily as an ozone precursor. Even though the construction emissions increase substantially in 2005 and 2006, annual emissions of ozone precursors from construction activities associated with the Proposed Action or the RLA Alternative would be too small to have a measurable effect on ozone levels. Consequently, construction-related emissions would have a less than significant air quality impact under the Proposed Action or the RLA Alternative and would not change the attainment status of the area.

Ordnance use at PTA would increase by about 70 percent under the Proposed Action and by about 110 percent under the RLA Alternative. Because emission quantities from ordnance use are very small and include only trace quantities of hazardous components, no significant air quality impacts would occur. SBCT transformation would add the Stryker armored vehicle to the tactical and support vehicle types currently used at PTA. Overall military vehicle use would double under the Proposed Action or the RLA Alternative. The net increase in military vehicle engine emissions would be 3.9 tons (3.5 metric tons) per year for reactive organic compounds, 37 tons (34 metric tons) per year for nitrogen oxides, 11.5 tons (10.5 metric tons) per year for carbon monoxide, 0.4 ton (0.4 metric ton) per year for sulfur oxides, and 3.3 tons (3 metric tons) per year for PM_{10}. This minimal increase in

emissions from vehicles would result in a less than significant impact. The addition of fixed wing cargo aircraft and UAV flight operations at PTA under the Proposed Action or the RLA Alternative would result in a less than significant increase in overall aircraft emissions. There would be a slight increase in the risk of wildfires at PTA under the Proposed Action or the RLA Alternative, but emissions associated with wildfires at PTA would remain a less than significant impact.

No additional staff personnel would be based at PTA under the Proposed Action or RLA. Consequently, there would be no air quality impact at PTA from changes in personnel numbers under the Proposed Action or RLA.

Table 8-12 summarizes the significance of air quality impacts at PTA under the Proposed Action, RLA, and No Action.

Proposed Action

Significant Impacts

Impact 1: Fugitive Dust from Military Vehicle Use. Vehicle travel on unpaved roads and other unpaved areas at PTA would increase by 73 percent under the Proposed Action. As many as 400 vehicles could participate in a single training exercise. Resulting PM_{10} emissions would be approximately 1,228 tons per year (1,114 metric tons per year). This represents an increase of about 429 tons (390 metric tons) per year compared to No Action conditions.

Table 8-12
Summary of Potential Air Quality Impacts at Pōhakuloa Training Area

Impact Issues	Proposed Action	Reduced Land Acquisition	No Action
Emissions from construction activities	⊙	⊙	○
Emissions from ordnance use	⊙	⊙	⊙
Engine emissions from military vehicle use	⊙	⊙	⊙
Fugitive dust from military vehicle use	⊗	⊗	⊙
Wind erosion from areas disturbed by military vehicle use	⊗	⊗	⊙
Emissions from increased aircraft operations	⊙	⊙	⊙
Emissions from wildfires	⊙	⊙	⊙
Other emissions from personnel increases	○	○	○

In cases when there would be both beneficial and adverse impacts, both are shown on this table.

LEGEND:

⊗ = Significant
⊘ = Significant but mitigable to less than significant
⊙ = Less than significant
\+ = Beneficial impact
N/A = Not applicable

○ = No impact

Sources of fugitive dust associated with military vehicle traffic include vehicle convoys on military vehicle trails, vehicle maneuver training on gravel or dirt roads inside military installations, and off-road military vehicle maneuvers inside military installations. Approximately 88 percent of the net increase in fugitive PM_{10} emissions would be associated with vehicle travel on unpaved roads, while the remaining 12 percent represents potential emissions from off-road vehicle maneuver activity.

Off-road vehicle maneuver activity at PTA would occur primarily along the northern side of the existing installation or in the WPAA. Off road use will remove vegetation and expose bare soil to wind erosion creating reoccurring exposure to high PM_{10} levels during frequent high winds. The Waikiʻi Ranch residential development would be bordered on three sides by the WPAA. The Kilohana Girl Scout Camp also would be bordered by the WPAA. Although the exact distribution of vehicle maneuver activity within PTA cannot be predicted, the WPAA is designated as a off road vehicle maneuver area. This would result in a significant impact to air quality.

Convoy traffic on the military vehicle trail between Kawaihae Harbor and PTA would be relatively sporadic in nature, with convoy traffic on any particular trail segment lasting for periods much shorter than the time frame of the relevant state and federal PM_{10} standards. Consequently, dust from vehicle convoy traffic on the PTA military vehicle trail would be unlikely to produce high fugitive dust concentrations lasting long enough to create any violations of the 24-hour average PM_{10} standards. Fugitive dust caused by convoy traffic on the PTA military vehicle trails would be a relatively small component of overall fugitive dust generation by military vehicle use.

Fugitive dust generated by military vehicle maneuver traffic inside military installations on dirt roads poses a greater potential for creating either nuisance conditions at nearby off-post locations or localized violations of the state or federal 24-hour average PM_{10} standards. Maneuver activity would tend to occur within relatively localized areas, and could last for periods of several hours. Visible dust is a clear indication of airborne PM_{10} concentrations that are typically in the range of several thousand micrograms per cubic meter. It takes only a few hours of such concentrations to produce a 24-hour average that exceeds the state and federal 24-hour average PM_{10} standard of 150 micrograms per cubic meter.

PM_{10} emissions are important because they are easily airborne and are small enough to be inhaled deep into the lungs creating potential adverse health effects. The 429 tons per year (390 metric tons per year) increase in fugitive PM_{10} emissions generated by military vehicle at PTA, the likelihood of exceeding the federal 24-hour standard, and the potential impacts to quality of life to Waikiʻi Ranch residents and users of Kilohana Girl Scout Camp combined may result in a significant air quality impact at PTA under the Proposed Action. Feasible mitigation measures are available to reduce the magnitude of this impact. Because most of the fugitive dust emissions would be produced by vehicle travel on unpaved roads, substantial reductions in fugitive dust generation are possible. However, it is unlikely that these dust control programs would be effective enough to reduce the net increase to a less than significant level.

Regulatory and Administrative Mitigation 1. No regulatory or administrative mitigations have been identified.

Additional Mitigation 1. As discussed in Chapter 5, Section 5.5.2, potential mitigation measures for this impact include using gravel, paving, spraying water, and applying dust control treatments to unpaved roads, and rotating and reseeding on maneuver areas. These mitigation measures, if implemented, would reduce the quantity of fugitive dust emissions.

PTA Trail already is planned as a gravel road, with paved sections where necessary to control erosion problems. The gravel surface has been taken into account in the fugitive dust emission estimates. Asphalt or concrete paving of the entire trail would further reduce dust generation from vehicle travel, but would not affect dust generation from off-road vehicle activity.

Water applications whenever road surface materials become dry would be expected to reduce fugitive dust emissions by 75 to 90 percent, but would require the use of large quantities of water. Required water quantities have not been estimated, but could become substantial over the course of a year. Consequently, the use of synthetic dust control chemicals might prove to be a more appropriate mitigation strategy.

Periodic application of synthetic dust control chemicals has proven effective in controlling fugitive dust from unpaved roads and tank trails at other military installations (USAEC 1996). Dust control effectiveness from chemical application would be very high initially but would decline over time. Control effectiveness values of over 50 percent generally can be expected for periods of 30 to 60 days under heavy use conditions (USAEC 1996). Army tests at Fort Hood and Fort Sill indicated that calcium chloride solutions were more effective and longer lasting than various synthetic polymers or calcium lignosulfonate. Use of chemical dust suppressants would be a feasible method to control fugitive dust from unpaved roads, parking lots, and similar well-defined dust sources.

Effective mitigation measures are more difficult to identify for off-road maneuver areas. Rotation of maneuver activities among available areas is effective only when the available area substantially exceeds the area needed for individual exercise events. Given the size of the WPAA, this mitigation approach would appear to be feasible. Vegetation reseeding programs normally would require the rotation of maneuver activities among available areas. The effectiveness of reseeding programs depends on having adequate germination and vegetation establishment periods between repeated disturbances. This would appear to be feasible for the off-road maneuver areas available at PTA.

Implementation of all of these proposed mitigations in coordination with the ITAM geographic information system and erosion-control and revegetation efforts discussed in sections 8.8, 8.9, and 8.10 of this chapter may reduce the impact of fugitive dust emissions to less than significant.

Impact 2: Wind Erosion from Areas Disturbed by Military Vehicle Use. Off-road vehicle activity can reduce or eliminate vegetation cover in affected areas, resulting in increased susceptibility to

wind erosion. The amount of off-road vehicle activity at PTA would increase by 89 percent under the Proposed Action. In addition, the area available for off-road vehicle maneuvers would increase from 8,843 acres (3,579 hectares) to 31,518 acres (12,755 hectares). Most of the additional land that would become available for off-road vehicle maneuvers has a very high potential for wind erosion if vegetation cover is reduced. The introduction of off-road vehicle maneuver activity into areas currently used for cattle grazing would be expected to reduce vegetation cover and increase the extent of ground disturbance. An estimated 2,447 tons per year (2,220 metric tons per year) of PM_{10} would be generated by wind erosion from the affected areas. This represents a net increase of about 1,602 tons (1,453 metric tons) per year compared to No Action. PM_{10} emissions are important because they are easily airborne and are small enough to be inhaled deep into the lungs creating potential adverse health effects. As with the issue of fugitive dust from direct vehicle travel the significant increase in fugitive PM_{10} emissions generated wind erosion at PTA, the likelihood of exceeding the federal 24-hour standard, and the potential impacts to quality of life to Waikiʻi Ranch residents and users of Kilohana Girl Scout Camp combined may result in a significant air quality impact at PTA under the Proposed Action.

Substantial mitigation efforts would be undertaken to minimize wind erosion from areas disturbed by vehicle maneuver activities. Potential mitigation measures for this impact would include programs to maintain vegetation cover between episodes of off-road vehicle maneuver activity. However, it is unlikely that the vegetation reseeding programs in coordination with the ITAM geographic information system and erosion-control and revegetation efforts discussed in sections 8.8, 8.9, and 8.10 of this chapter could be sufficiently effective to reduce the net increase in annual wind erosion at PTA to a less than significant level.

Regulatory and Administrative Mitigation 2. No regulatory or administrative mitigations have been identified.

Additional Mitigation 2. Potential mitigation measures for this impact include:

- Rotate use among available areas in a manner that allows maintenance of reasonably complete vegetation cover; and
- Implement of a vegetation reseeding program to re-establish vegetation cover between periods of vehicle maneuver activities.

Rotation of maneuver activities among available areas is potentially effective when the available area substantially exceeds the area needed for individual exercise events. That appears to be the case for PTA. Activity rotations at PTA may be able to provide sufficient time for substantial vegetation recovery between repeated disturbances.

Vegetation reseeding programs normally would require the rotation of maneuver activities among available areas. The effectiveness of reseeding programs depends on having adequate germination and vegetation establishment periods between repeated disturbances. This may be possible for the large off-road maneuver areas that would become available at PTA under the Proposed Action. Implementing the proposed mitigations in coordination with the

ITAM geographic information system and erosion-control and revegetation efforts discussed in sections 8.8, 8.9, and 8.10 of this chapter may not reduce the impact of fugitive dust emissions to a less than significant level.

Less than Significant Impacts

Emissions From Construction Activities. The Proposed Action would include nine construction projects at PTA, with construction activities occurring from 2004 into 2007. Construction projects would include two training range facilities (a BAX and AALFTR), a tactical vehicle wash facility, an ammunition storage facility, a range maintenance facility, an upgrade and realignment of Bradshaw Army Airfield, a military vehicle trail between Kawaihae Harbor and PTA, a communications cable system, and 11 FTI towers. UXO clearance would be required prior to construction of the BAX and AALFTR ranges. Figure 8-10 summarizes estimated emissions from these construction projects according to current construction schedules. Maximum annual nitrogen oxide emissions from construction equipment would be 192 tons (174 metric tons) in 2005 and 184 tons (167 metric tons) in 2006. Nitrogen oxide emissions are of concern primarily as an ozone precursor. Even though construction emissions would increase substantially in 2005 and 2006, annual emissions of ozone precursors from construction activities associated with the Proposed Action would be too to have a measurable effect on ozone levels. Consequently, construction-related emissions under the Proposed Action would have a less than significant air quality impact and would not change the attainment status of the area.

Emissions from Ordnance Use. Overall ordnance use by the 25th ID(L) at PTA would increase by about 70 percent from about 3.4 million items per year to about 5.7 million items per year under the Proposed Action. About 96 percent of the ordnance use would be small arms ammunition; heavy weapons ordnance, demolition charges, smoke devices, and pyrotechnic devices would account for about 4 percent of the annual ordnance use. Emissions from ordnance use have not been quantified. However, as discussed for SBMR in Section 5.5.2, pollutant emission quantities from ordnance use are small (Mitchell and Suggs 1998). Based on the general nature of detonation processes and the very low emission rates that have been published in studies of munitions firing and open detonations, emissions associated with ordnance use at PTA pose very little risk of creating adverse air quality impacts. Consequently, air quality impacts from munitions use under the Proposed Action are considered less than significant.

Engine Emissions from Military Vehicle Use. Military vehicle use at PTA would increase appreciably under the Proposed Action, with an estimated 69 percent increase in vehicle mileage and an estimated 76 percent increase in vehicle operating hours. As many as 400 vehicles could participate in a single exercise. Annual emissions from military vehicle use would increase by 128 percent compared to No Action conditions. Figure 8-11 summarizes estimated net increase in annual engine emissions from military vehicle use at PTA under the Proposed Action. The net increase in military vehicle engine emissions would be 3.9 tons (3.5 metric tons) per year for reactive organic compounds, 37 tons (34 metric tons) per year for nitrogen oxides, 11.5 tons (10.5 metric tons) per year for carbon monoxide, 0.4 ton (0.4 metric ton) per year for sulfur oxides, and 3.3 tons (3 metric tons) per year for PM_{10}.

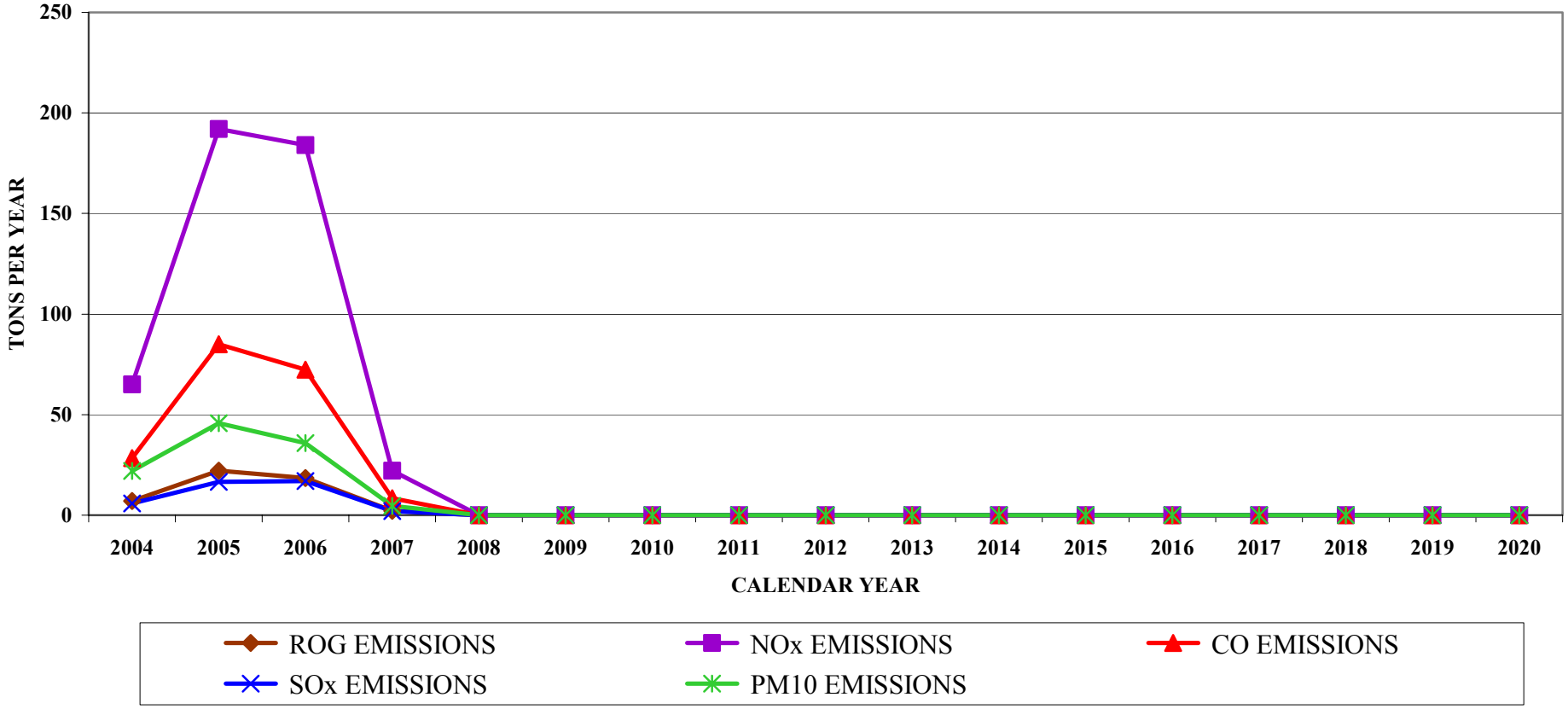

Figure 8-10 Annual Construction Emissions, Pōhakuloa Training Area, Proposed Action

Emissions from military vehicle use at PTA would be too small to have a measurable effect on ambient pollutant concentrations. Consequently, emissions from increased military vehicle use at PTA would be a less than significant impact under the Proposed Action.

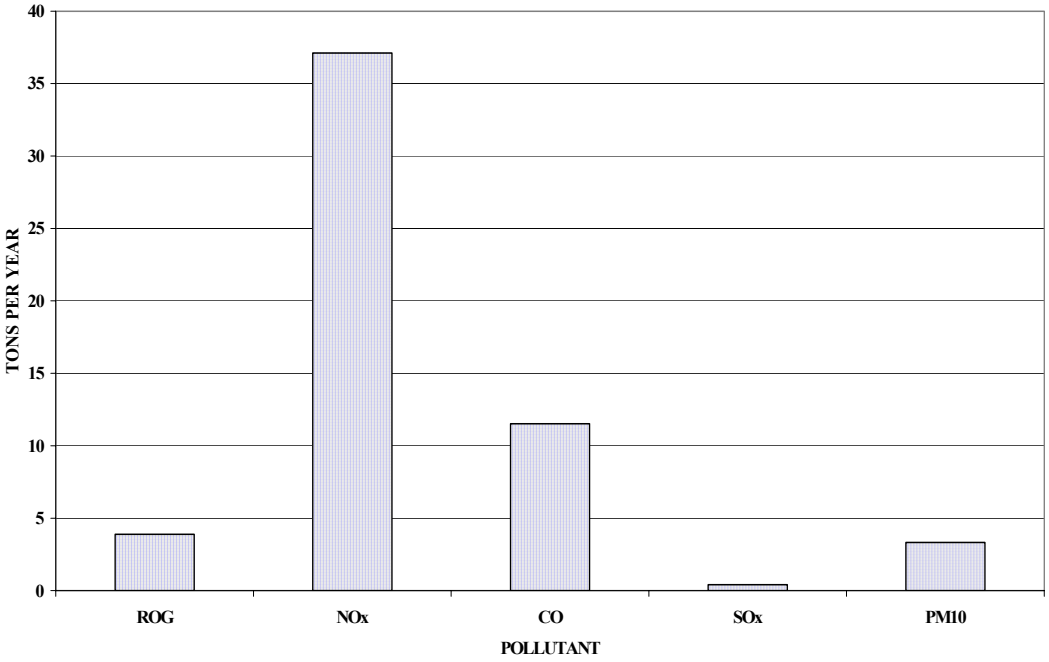

Figure 8-11. Net Change in Military Vehicle Emissions for the Proposed Action: Pōhakuloa Training Area

Emissions from Increased Aircraft Operations. The Proposed Action would not result in any substantial change to existing Army helicopter flight operations in Hawai'i. Airfield improvements at BAAF would accommodate increased use of fixed wing cargo aircraft (C-130 and C-17 aircraft) for transporting troops and equipment to PTA. The Shadow 200 UAV would be used during many training exercises at PTA under the Proposed Action. However, current patterns of helicopter flight activity would continue to be the dominant flight activity at PTA. Because the net increase in emissions resulting from added cargo aircraft and UAV flight activity would be too small to have much effect on ambient pollutant concentrations, emissions from increased aircraft operations would be a less than significant impact under the Proposed Action.

Emissions from Wildfires. Tracers, flares, and pyrotechnics have the potential for starting wildfires on training range areas. The use of such munitions would increase somewhat under the Proposed Acton, with a corresponding increase in the potential for wildfires. For purposes of this EIS, wildfire emissions at PTA have been estimated by assuming 80 acres (32.4 hectares) burn each year, with a fuel density of 19 tons (17 metric tons) per acre. Resulting emissions would be as follows:

- 0.23 ton carbon monoxide (0.21 metric ton);
- 0.01 ton nitrogen oxide (0.01 metric ton); and

- 0.03 ton PM_{10} (0.03 metric ton).

These emission quantities would not produce any significant air quality impacts in off-base areas. Consequently, emissions from wildfires on range areas would be a less than significant impact under the Proposed Action.

No Impact

Other Emissions from Personnel Increases. The Proposed Action would not alter the number of staff personnel based at PTA. Consequently, the Proposed Action would not result in any increase in emissions from personal vehicle use or any increase in emissions from fixed facilities at PTA.

Reduced Land Acquisition

Significant Impacts

Impact 1: Fugitive Dust from Military Vehicle Use. Impacts and mitigation from fugitive dust emissions from military vehicle use would be the same as under the Proposed Action.

Regulatory and Administrative Mitigation 1. No regulatory or administrative mitigations have been identified.

Additional Mitigation 1. Mitigation measures for fugitive dust associated with military vehicle use would be the same as those for the Proposed Action.

Impact 2: Wind Erosion from Areas Disturbed by Military Vehicle Use. Wind erosion from vehicle maneuver areas at PTA would be the same under RLA Alternative as discussed for the Proposed Action.

Regulatory and Administrative Mitigation 2. No regulatory or administrative mitigations have been identified.

Additional Mitigation 3. Mitigation measures for wind erosion from areas disturbed by military vehicle use would be the same as discussed for the Proposed Action.

Less than Significant Impacts

Emissions From Construction Activities. The RLA Alternative would include ten construction projects at PTA, with construction activities occurring from 2004 into 2007. Construction projects would include three training range facilities (a BAX, AALFTR, and QTR2), a tactical vehicle wash facility, an ammunition storage facility, a range maintenance facility, an upgrade and realignment of Bradshaw Army Airfield, a military vehicle trail between Kawaihae Harbor and PTA, a communications cable system, and 11 FTI towers. UXO clearance would be required prior to construction of the BAX, AALFTR, and QTR2 ranges. Figure 8-12 summarizes estimated emissions from these construction projects according to current construction schedules. Maximum annual nitrogen oxide emissions from construction equipment would be 213 tons (193 metric tons) in 2005 and 186 tons (169 metric tons) in 2006. Nitrogen oxide emissions are of concern primarily as an ozone precursor. Even though the construction emissions would drastically increase during those

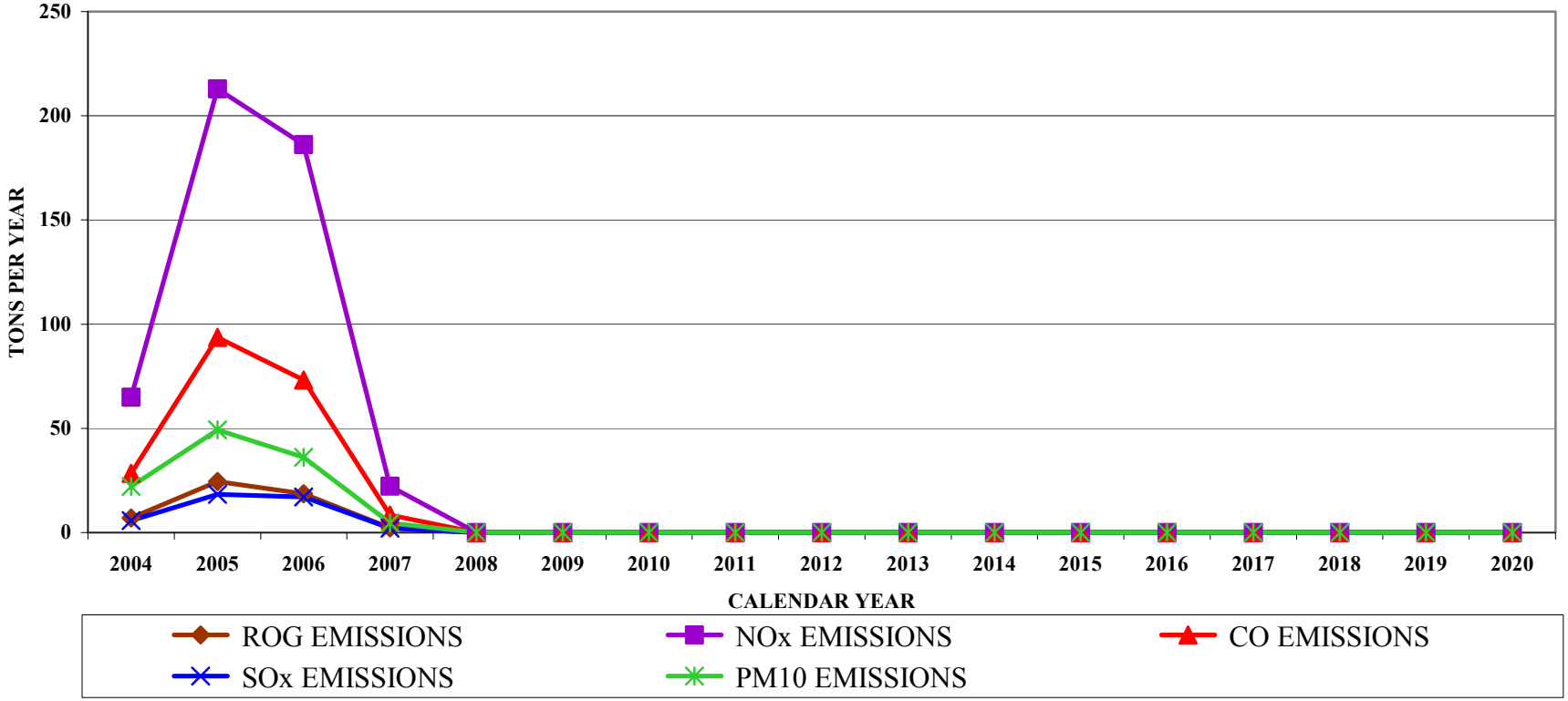

Figure 8-12 Annual Construction Emissions, Pōhakuloa Training Area, Reduced Land Acquisition

years, annual emissions of ozone precursors from construction activities associated with the RLA Alternative would be too small to have a measurable effect on ozone levels. Consequently, construction-related emissions under the RLA Alternative would have a less than significant air quality impact and would not change the attainment status of the area.

Emissions from Ordnance Use. Ordnance use by the 25th ID(L) at PTA would increase by 110 percent under Reduced Land Acquisition. Placement of the QTR2 range at PTA would result in higher quantities of small arms ammunition being used at PTA under the RLA Alternative than under the Proposed Action. Approximately 97 percent of the 7.1 million ordnance items used per year would be small arms ammunition. Emissions associated with ordnance use at PTA would pose very little risk of creating adverse air quality impacts. Consequently, air quality impacts from munitions use at PTA under the RLA Alternative are considered less than significant.

Engine Emissions from Military Vehicle Use. Military vehicle use at PTA under the RLA Alternative would be the same as discussed for the Proposed Action. As illustrated previously in Figure 8-10, the net increase in military vehicle engine emissions would be 3.9 tons (3.5 metric tons) per year for reactive organic compounds, 37 tons (34 metric tons) per year for nitrogen oxides, 11.5 tons (10.5 metric tons) per year for carbon monoxide, 0.4 ton (0.4 metric ton) per year for sulfur oxides, and 3.3 tons (3 metric tons) per year for PM_{10}. Emissions from military vehicle use at PTA would be too small to have a measurable effect on ambient pollutant concentrations. Consequently, emissions from increased military vehicle use at PTA would be a less than significant impact under the RLA Alternative.

Emissions from Increased Aircraft Operations. The RLA Alternative would have the same small effect on emissions from aircraft operations at PTA as discussed for the Proposed Action. Consequently, the increase in aircraft emissions at PTA under the RLA Alternative would be a less than significant impact.

Emissions from Wildfires. The RLA Alternative would have the same potential for wildfires at PTA as discussed for the Proposed Action. As noted for the Proposed Action, emissions from wildfires would be a less than significant impact under the RLA Alternative.

No Impact

Other Emissions from Personnel Increases. The RLA Alternative would not alter the number of staff personnel based at PTA. Consequently, RLA would not result in any increase in emissions from personal vehicle use or any increase in emissions from fixed facilities at PTA.

No Action

Less than Significant Impacts

Emissions from Ordnance Use. Overall ordnance use under No Action would be less than under the Proposed Action or RLA. Based on the general nature of detonation processes and the very low emission rates that have been published in studies of munitions firing and open detonations, emissions associated with training ordnance use at PTA pose very little risk of creating adverse air quality impacts. Consequently, air quality impacts from munitions use under No Action are considered less than significant.

Engine Emissions from Military Vehicle Use. Vehicle use associated with PTA would remain at present levels under No Action. Estimated annual emissions from vehicle engine operations would be as follows:

- 3.0 tons (2.8 metric tons) per year of reactive organic compounds;
- 29 tons (26 metric tons) per year of nitrogen oxides;
- 9.0 tons (8.2 metric tons) per year of carbon monoxide;
- 0.32 ton (0.29 metric ton) per year of sulfur oxides; and
- 2.6 tons (2.4 metric tons) per year of PM_{10}.

Emissions from military vehicle use at PTA would be too small to have a measurable effect on ambient pollutant concentrations. Consequently, military vehicle engine emissions would have a less than significant impact under No Action.

Fugitive Dust from Military Vehicle Use. Vehicle numbers and estimated annual use levels would remain at current conditions under No Action. Fugitive dust PM_{10} emissions from military vehicle use at PTA would remain at the current level of about 798 tons per year (724 metric tons per year). Because existing conditions at PTA have not led to any known violations of state or federal ambient air quality standards, the fugitive dust from military vehicle use at PTA would have a less than significant impact under No Action.

Wind Erosion from Areas Disturbed by Tactical Vehicle Use. Vehicle maneuver activity at PTA would remain the same as current conditions under No Action. An estimated 845 tons per year (766 metric tons per year) of PM_{10} would be generated by wind erosion from the affected areas. Because existing conditions at PTA have not led to any known violations of state or federal ambient air quality standards, wind erosion from disturbed areas would be a less than significant impact under No Action.

Emissions from Increased Aircraft Operations. There would be no change in aircraft operations and no increase in aircraft emissions at PTA under No Action. Because there would be no change from current conditions and because current conditions have not created any known violations of state or federal ambient air quality standards, emissions from aircraft operations under No Action would have a less than significant impact on air quality.

Emissions from Wildfires. The risk of wildfires at PTA would remain the same as for current conditions under No Action. Because the frequency and size of wildfires at PTA would not be expected to change, emissions from wildfires would be a less than significant impact under No Action.

No Impact

Emissions from Construction Activities. No construction projects are associated with No Action. Consequently, there would be no air quality impact from construction under No Action.

Other Emissions from Personnel Increases. There would be no change in personnel numbers under No Action. Consequently, No Action would not result in any emissions from added personal vehicle use or any increase in emissions from fixed facilities.